

AMENDMENTS TO THE CLAIMS

Please amend Claims as follows. Insertions are shown underlined while deletions are ~~struck-through~~.

1 (currently amended): A polishing pad used for chemical mechanical polishing comprising:

a polishing region; and

a light-transmitting region constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$\Delta T = T_0 - T_1$$

wherein ΔT (%) is a difference between T_0 (%) and T_1 (%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%) of the material of for the light-transmitting region in percentage as measured at the measurement a plurality of wavelengths between 400 and 700 nm ~~λ~~ after dipping the material in a KOH aqueous solution at pH 11 for 24 hours and T_0 is a light transmittance (%) of the material in percentage as measured at the plurality of measurement wavelengths ~~λ~~ before the dipping,

wherein the material of the light-transmitting region is formed comprises a polyurethane resin comprising 4,4'-diphenylmethane diisocyanate as an organic isocyanate and at least one high-molecular-weight poltol selected from the group consisting of from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) and polyester polyol formed from adipic acid, hexane diol, and ethylene glycol,

whereby the change rate in the light transmittance of the light-transmitting region in measurement wavelengths of 400 to 700 nm before dipping is 50 (%) or less,
wherein the change rate (%) = {(maximum light transmittance in 400 to 700 nm - minimum light transmittance in 400 to 700 nm)/maximum light transmittance in 400 to 700 nm} × 100.

2 (currently amended): A polishing pad used for chemical mechanical polishing comprising:

a polishing region; and

a light-transmitting region constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$\Delta T = T_0 - T_1$$

wherein ΔT (%) is a difference between T_0 (%) and T_1 (%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%) of the material ~~of for the~~ light-transmitting region in percentage as measured at the measurement a plurality of wavelengths between 400 and 700 nm after dipping the material in an H_2O_2 aqueous solution at pH 11 for 24 hours and T_0 is a light-transmittance (%) of the material in percentage as measured at the plurality of measurement wavelengths λ before the dipping,

wherein the material of the light-transmitting region is formed comprises a polyurethane resin comprising 4,4'-diphenylmethane diisocyanate as an organic isocyanate and at least one high-molecular-weight poltol selected from the group consisting of from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) and polyester polyol formed from adipic acid, hexane diol, and ethylene glycol,

whereby the change rate in the light transmittance of the light-transmitting region in measurement wavelengths of 400 to 700 nm before dipping is 50 (%) or less,
wherein the change rate (%) = {(maximum light transmittance in 400 to 700 nm -
minimum light transmittance in 400 to 700 nm)/maximum light transmittance in 400 to
700 nm}×100.

3 (previously presented): The polishing pad according to claim 1, wherein the material forming the light transmitting region is non-form.

4 (previously presented): The polishing pad according to claim 1, wherein the material forming the polishing region is fine-cell foam.

5 (canceled):

6 (previously presented): The polishing pad according to claim 1, wherein the polishing region at the polishing side is provided with grooves.

7 (currently amended): A method of manufacturing a semiconductor device, which comprises:

(i) providing a polishing pad comprising:

a polishing region; and
a light-transmitting region constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$\Delta T = T_0 - T_1$$

wherein ΔT (%) is a difference between T_0 (%) and T_1 (%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%) of the material ~~off~~ for the light-transmitting region in percentage as measured at the measurement plurality of wavelength between 400 and 700 nm λ after dipping the material in a KOH aqueous solution at pH 11 for 24 hours and T_0 is a light-transmittance (%) of the material in percentage as measured at the plurality of the measurement wavelengths λ before the dipping,

wherein the material of the light-transmitting region is formed comprises a polyurethane resin comprising 4,4'-diphenylmethane diisocyanate as an organic isocyanate and at least one high-molecular-weight poltol selected from the group consisting of from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) and polyester polyol formed from adipic acid, hexane diol, and ethylene glycol,

whereby the change rate in the light transmittance of the light-transmitting region in measurement wavelengths of 400 to 700 nm before dipping is 50 (%) or less, wherein the change rate (%) = $\{($ maximum light transmittance in 400 to 700 nm – minimum light transmittance in 400 to 700 nm $) /$ maximum light transmittance in 400 to 700 nm $\} \times 100$; and

(ii) polishing the surface of a semiconductor wafer with the polishing pad .

8 (canceled):

9 (previously presented): The polishing pad according to 2, wherein the material forming the polishing region is fine-cell foam.

10 (previously presented): The polishing pad according to 3, wherein the material forming the polishing region is fine-cell foam.

11-13 (canceled):

14 (previously presented): The polishing pad according to claim 2, wherein the polishing region at the polishing side is provided with grooves.

15 (previously presented): The polishing pad according to claim 3, wherein the polishing region at the polishing side is provided with grooves.

16 (previously presented): The polishing pad according to claim 4, wherein the polishing region at the polishing side is provided with grooves.

17 (canceled):

18 (currently amended): A method of manufacturing a semiconductor device, which comprises:

(i) providing a polishing pad comprising:

a polishing region; and

a light-transmitting region constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$\Delta T = T_0 - T_1$$

wherein ΔT (%) is a difference between T_0 (%) and T_1 (%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%) of the material off for the light-transmitting region in percentage as measured at the measurement a plurality of wavelengths λ between 400 and 700 nm after dipping the material in an H_2O_2 aqueous solution at pH 11 for 24 hours and T_0 is a light-transmittance (%) of the material in percentage as measured at the plurality of the measurement wavelengths λ before the dipping,

wherein the material of the light-transmitting region is formed comprises a polyurethane resin comprising 4,4'-diphenylmethane diisocyanate as an organic isocyanate and at least one high-molecular-weight poltol selected from the group consisting of from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii) and polyester polyol formed from adipic acid, hexane diol, and ethylene glycol,

whereby the change rate in the light transmittance of the light-transmitting region in measurement wavelengths of 400 to 700 nm before dipping is 50 (%) or less,

wherein the change rate (%) = $\{($ maximum light transmittance in 400 to 700 nm – minimum light transmittance in 400 to 700 nm $)$ /maximum light transmittance in 400 to 700 nm $\} \times 100$; and

(ii) polishing the surface of a semiconductor wafer with the polishing pad.

19 (currently amended): A polishing pad for chemical mechanical polishing comprising:
a polishing region having a through-hole in an axial direction; and
a light-transmitting region fitted in the through-hole, said light-transmitting region being constituted by a material having a ΔT of 10 (%) or less which is defined by the equation

$$\Delta T = T_0 - T_1$$

wherein ΔT is a difference between T_0 (%) and T_1 (%) as measured over the whole range of measurement wavelengths of from 400 to 700 nm, wherein T_1 is a light transmittance (%) of the material offor the light-transmitting region in percentage as measured at a plurality of measurement wavelengths between 400 to 700nm λ after dipping the material for 24 hours in a KOH aqueous solution having a pH of 11 or in an H_2O_2 aqueous solution having pH of 4, and T_0 is a light-transmittance (%) of the material in percentage as measured at the plurality of measurementthe -wavelengths λ before the dipping,

wherein the material of the light-transmitting region is formed comprises a polyurethane resin comprising 4,4'-diphenylmethane diisocyanate as an organic isocyanate and at least one high-molecular-weight poltol selected from the group consisting of from (i) polycaprolactone polyol, (ii) polyester polycarbonate polyol, or (iii)and polyester polyol formed from adipic acid, hexane diol, and ethylene glycol,

whereby the change rate in the light transmittance of the light-transmitting region in measurement wavelengths of 400 to 700 nm before dipping is 50 (%) or less, wherein the change rate (%) = $\{($ maximum light transmittance in 400 to 700 nm – minimum light transmittance in 400 to 700 nm $)$ /maximum light transmittance in 400 to 700 nm $\} \times 100$.

20 (canceled):

21 (previously presented): The polishing pad according to claim 19, further comprising a cushion layer laminated on a back side of the polishing region opposite to its polishing side, wherein the cushion layer has a through-hole at the same position as the light-transmitting region with respect to the axial direction.

22 (previously presented): The polishing pad according to claim 21, wherein the cushion layer is laminated on the polishing region using a double-coated tape.

23 (previously presented): The polishing pad according to claim 19, wherein the material is a polyurethane resin comprising an organic isocyanate, a polyol, and a chain extender.

24 (previously presented): The polishing pad according to claim 23, wherein in the polyurethane resin, a ratio of the number of isocyanate groups of the organic isocyanate to the number of functional groups of the polyol and the chain extender in total is 0.95 to 1.15.